

## DAMAGE CONTROL: ALUMS WORKING TO MITIGATE FIRE, FLOOD DAMAGE IN ARIZONA

By Jo Ann Lloyd

Lucinda Andreani (B.S., Natural Resources Management '81) and Lindsay Daley (B.A., Political Science '01) say their Cal Poly education, with its Learn by Doing approach, has brought them recognition as the "get it done" people at Coconino County, Ariz., where they are helping mitigate damage caused by last year's fire and flood.

And that's good news to thousands of residents living in north central Arizona.

Andreani and Daley are leading efforts to address the damage resulting from dual disasters that occurred in June and July of 2010: a 15,000-acre wildfire and subsequent flooding.

The fire started June 20 on the San Francisco Peaks, a 13,000-foot volcanic mountain range north of Flagstaff. "It was small in scope, but it occurred on very steep terrain above a rural developed area," Andreani said. "And it burned very hot."

The fire was out by the beginning of July. A U.S. Forest Service Burned Area Emergency Response Team then surveyed the damage and determined that rains could result in severe flooding to the Timberline, Fernwood and Doney Park neighborhoods, which are below the burned area.

Mother Nature wasted no time testing this theory. "The first storm hit on July 16," Andreani said, "and on July 20, we had a deluge. One and a quarter inches of rain fell in 15 minutes. The water was rushing down at about 7,000 cubic feet per second from just one of the 11 drainages in this area – it flowed like the Colorado River."

Along with the water came sediment, ash, debris and boulders, creating a massive mess impacting about 1,500 homes, washing out parts of U.S. Highway 89, and threatening a regional landfill. The remainder of the monsoon season brought higher rainfall levels than normal, resulting in 18 flooding events.

Andreani, director of special initiatives for the county manager, and Daley, information coordinator for Public Works, have spent much of their time since then addressing both immediate and future flood issues. They set up and managed a call center, dispensing advice on a wide range of topics, such as how to protect homes with sandbags, and established an online system for tracking the needs of more than 5,000 residents of the flood area. The county installed five miles of Jersey barriers (heavy concrete walls usually used to separate lines of traffic) at 156 homes to protect them from flood waters. But the water was so forceful it knocked the barriers over in some locations.

"We distributed 900,000 sandbags," Daley said. "We coordinated with the United Way of Northern Arizona, helping organize 800 volunteers. We worked with vendors and contractors to make materials available for home repair. We provided some level of service to every home that was in need."

The two are preparing for the next flood, considered as inevitable as the next monsoon. They are working with the Public Works director to manage the whole effort, oversee all communications and long-term mitigation efforts, including infrastructure changes such as digging drainage ditches and channels to divert water away from homes and the landfill.

Andreani and Daley have learned a great deal over the last year, and that knowledge will be put to good use. Arizona this year experienced two additional major wildfires, creating flooding challenges for other counties. "We are sharing everything we learned from our experiences," Andreani said. "Last year we had a difficult time finding answers and solutions. We are trying to build lessons learned and sharing that with other counties."



Flooding that resulted from the 2010 Schultz Fire. All photos courtesy Coconino County, Ariz.



Cal Poly alum Lucinda Andreani, left, Arizona Gov. Jan Brewer, center, and alum Lindsay Daley



The biggest challenge facing Coconino County is funding. "We need \$20 million to \$30 million to implement the mitigation measures," Andreani said. "We are a small county –

Fall 2011

### In this edition:

- [Center for Science and Mathematics](#)
- [Editor's Note](#)
- [Collaboration Packs a Punch](#)
- [Hot Shots: Urban Dictionary](#)
- [Damage Control](#)
- [WOW 2011](#)
- [Alumni In the News](#)
- [Chuck Templeton Changes the World](#)
- [Giving: Putting the 'Do' in Learn by Doing](#)
- [University News](#)

**PLAN  
A GIFT  
TODAY**

Give now



Flooding following the 2010 Schultz Fire

135,000 people with mostly public land that is U.S. Forest Service or Indian reservations. Our tax base is extremely limited."

They are working with state and federal agencies to secure funding, and Andreani is confident in that role, thanks to two co-op experiences she had while at Cal Poly. "All the knowledge I gained about regulation, I am putting to use today," she said. "It became very important with this catastrophe."

Although Daley said her job can be stressful with long hours, she said it can also be fun. "I never thought I would know so much about civil engineering, hydrology or road maintenance. The ability to learn about subjects I didn't study in school is great fun."

[CP Home](#) • [CP Find It](#) • [Get Adobe Reader](#) • [Assistance Accessing News Web pages](#)

**Events • News Releases**

**Cal Poly Update E-newsletter**

**Alumni Association • Giving • Athletics**



**Cal Poly Public Affairs**  
California Polytechnic State University  
San Luis Obispo, CA 93407  
805.756.1511  
[polynews@calpoly.edu](mailto:polynews@calpoly.edu)